AMENDED CLAIMS

1. A method of making a population of human functional OEG cells for transplantation into a patient, which comprises:

a) providing a sample of primary human OEG cells;

b) immortalizing the OEG cells by transforming the OEG cells with a DNA construct comprising a removable DNA segment containing an oncogene or combination of oncogenes, thereby producing immortalised OEG cells;

c) growing the immortalised OEG cells;

d) selecting those immortalised OEG clonal cell lines which maintain their functional properties; and

e) removing the oncogene or combination of oncogenes from the immortalised OEG cells, the removal resulting in the production of the population of human functional OEG cells for transplantation into the patient.

2. The method of claim 1, wherein the oncogene or combination of oncogenes is made removable by flanking it with recombinase target sites, and the removing is accomplished by introducing into the immortalised cells a gene that is expressed to produce a recombinase that specifically recognizes the recombinase target sites.

3. The method of claim 2, wherein the recombinase is Cre recombinase and the recombinase target sites are loxP sites.

4. The method of claim 1, wherein the oncogene is the gene encoding SV40 large T antigen, the gene encoding telomerase catalytic subunit, the gene encoding Bmi-1 protein or any combination of said oncogenes.

5. The method of claim 1, wherein the removable DNA segment further contains a suicide gene, which encodes a gene product that enables destruction of the immortalised cells by an exogenous agent if the removable DNA segment is not removed from the cells.

6. The method of claim 5, wherein the suicide gene is a gene encoding herpes simplex virus thymidine kinase, and the cells are destroyed by exposure to gancyclovir if the removable DNA segment is not removed from the cells.

7. A population of human functional OEG cells produced by the method of claim 5.

8. A method of treating a patient for neural damage, comprising transplanting into the patient a sufficient quantity of the human OEG cells of claim 7 to provide promotion of neuronal regeneration in the neuronal injured region of the patient.

9. A method of making a population of human functional OEG cells for transplanting into a patient, which comprises:

a) providing a sample of primary human OEG cells;

b) immortalizing the OEG cells by transforming the OEG cells with a DNA construct comprising a removable DNA segment containing an oncogene or a combination of oncogenes, a selectable marker gene, and a gene encoding herpes simplex virus thymidine kinase, the genes together being flanked on either side by loxP sites;

c) growing the immortalised human OEG cells;

d) selecting those immortalised OEG clonal cell lines which maintain their functional properties; and

e) reversing the immortalization of the human OEG cells by removing the DNA segment from the immortalised OEG cells, the removing being accomplished by introducing into the immortalised OEG cells a gene encoding Cre recombinase to effect excision of the DNA segment at the loxP sites, the excision resulting in the production of the population of human functional OEG cells for transplanting into a patient.

10. The method of claim 9, wherein the oncogene is the gene encoding SV40 large T antigen, the gene encoding telomerase catalytic subunit, the gene encoding Bmi-1 protein or any combination of said oncogenes.

11. A population of functional OEG human cells produced by the method of claim 9.

12. A method of treating a patient for neural damage, comprising transplanting into the patient a sufficient quantity of the OEG cells of claim 11 to provide promotion of neuronal regeneration in the neuronal injured region of the patient.

13. An immortalised human OEG cell comprising a primary human OEG cell transformed with a DNA construct comprising two recombinase target sites that flank an oncogene or combination of oncogenes which confers immortalization to the OEG cell, wherein the immortalization is reversible by excision of the oncogene by cleavage at the recombinase target sites when the target sites are exposed to a recombinase that specifically recognizes the target sites.

14. The immortalised OEG cell of claim 13, wherein the recombinase target sites are loxP sites and the immortalization is reversible by Cre recombinase cleavage at the loxP sites.

15. The immortalised OEG cell of claim 13, wherein the DNA construct further comprises a selectable marker gene.

16. The immortalised OEG cell of claim 13, wherein the DNA construct further comprises a suicide gene, which encodes a gene product that enables destruction of the immortalised OEG cell by an exogenous agent if the oncogene is not removed from the cells.

17. The immortalised OEG cell of claim 16, wherein the suicide gene is a gene encoding herpes simplex virus thymidine kinase, and the exogenous agent is gancyclovir.

18. A cell line comprising a population of the immortalised human OEG cell of claim 13.

19. A reverse-immortalised OEG human cell that is functional upon transplantation into a patient, produced by exposing the DNA construct within the immortalised human OEG cell of claim 13 to a recombinase that excises the oncogene or combination of oncogenes by cleavage at the recombinase target sites.

20. A method of treating a patient for neural damage, comprising transplanting into the patient a sufficient quantity of the reverse-immortalised OEG human cells of claim 19 to provide promotion of neuronal regeneration in the neuronal injured region of the patient.

21. A cell library comprising a collection of reverse-immortalised OEG human cells prepared according to the methods of any one of claims 1 to 6 or 9 to 10.

22. A reverse immortalised functional human olfactory ensheathing glia (OEG) cell line.

23. A cell line according to claim 22, for use in a method of therapy.

24. A cell line according to claim 22, for use in promoting neuronal regeneration.

25. A pharmaceutical composition comprising a human cell line as defined in claims 22-24, and a pharmaceutically acceptable carrier.

26. The use of reverse-immortalised human olfactory ensheathing glia cells as defined in claims 7, 11, 19 or 22 in the preparation of a medicament for treating neuronal damage.